H
W N

Wagner, Heindel, and Noyes, Inc.

• Consulting Hydrogeologists
• Engineers
• Environmental Scientists

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October 17, 1994

Mr. Richard Spiese
Agency of Natural Resources
Hazardous Materials Management Division
103 South Main Street/West Office
Waterbury, VT 05671-0404

RE: Former Empire Launderers and Cleaners Site
241 - 249 North Winooski Avenue
Burlington, Vermont

Dear Richard:

We have completed our supplementary investigation of the former Empire Launderers and Cleaners facility in Burlington, Vermont. The follow-up investigation included the drilling and installation of two monitoring wells, laboratory analysis of soil and groundwater samples, evaluation of potential underground storage tank locations, and additional soil vapor work. The results of the follow-up investigation are described below. Supporting documentation is appended in the Attachment.

Site Location and History

The former Empire Launderers and Cleaners facility is located at 241 - 249 North Winooski Avenue in Burlington, Vermont (see Site Location Map, page 1 of Attachment). The morphology and land use history of the property was described in the work plan for the site dated May 4, 1994.

Soil Borings/Monitoring Well Installation

Two soil borings were completed on June 21 - 23, 1994 to assess the possibility of deeper soil and groundwater contamination on the subject property. Monitoring well MW-1 was placed to evaluate groundwater quality in the vicinity of an illicit dry well and downgradient from known areas of dry cleaning activity. Monitoring well MW-2 was positioned to evaluate groundwater quality in the vicinity of the former dry cleaning locations (see Site Plan, page 2 of Attachment).

The soil borings were drilled by M&W Soils Engineering, Inc. under WH&N supervision. Split spoon samples were collected in each boring at 5 foot intervals from the ground surface to the total depth. Soil samples were described and screened with a Photovac Microtip photoionization detector (PID). Based on the head space screening results, one

soil sample from MW-1 and three from MW-2 were submitted for laboratory analysis of VOCs (EPA Method 8240) and PCBs (EPA Method 8080). Annotated soil logs and drillers logs are compiled in the Attachment (pages 3 to 12).

Monitoring well MW-1 was completed to a depth of approximately 70 feet below ground surface (bgs). In general, soils consisted of medium-to fine-grained sand with silty lenses. No PID readings above background (0.2 - 0.4 ppm) were observed in any of the split-spoon samples. The well was completed in a "perched" saturated zone that has been reported in the area in other site investigations.[1]

Monitoring well MW-2 was completed to a depth of approximately 126 feet bgs. From the ground surface to a depth of approximately 60 feet, the soils consisted of medium-to fine-grained sand with silty lenses. From 60 feet to the base of the boring, soils consisted of silty fine sand, silt and silty clay. PID readings from 0.1 to 0.2 ppm above background were observed in five of the split-spoon samples. The depth to water was approximately 120 feet bgs.

During the soil borings process, ten-foot soil intervals were screened for VOC contamination using a vacuum extraction system. After purging, a representative soil vapor sample was collected in a tedlar bag and analyzed by PID and 0_2, CO_2 and CH_4 meters. The soil vapor analytical results are tabulated on page 13 of the Attachment.

In general, VOC concentrations ranged from 0.0 to 0.1 ppm and 0.3 to 2.6 ppm above background in MW-1 and MW-2, respectively. Typically, O_2 levels ranged from 13 to 19% and CO_2 concentrations varied from 2 to 6% in both borings. Methane concentrations remained at background.

The two monitoring wells were constructed of 2" diameter PVC pipe with factory slotted (0.020") screen. The screened sections were double-wrapped with filter sock to reduce the influx of fine sediment into the monitoring wells. Well construction details are provided on the soil boring logs.

Site Survey and Groundwater Elevation Results

The locations and relative elevations of the two monitoring wells were surveyed following well completion. The depth to water in each monitoring well was determined on July 13, 1994. It is not possible to complete a rudimentary groundwater contour map because the wells were completed at two different levels. The topography and the results of the Dennison Environmental Site Assessment Report for the adjacent property, indicate the regional groundwater flow direction is northwest toward the Winooski River.

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[1] Dennison Environmental Services Site Assessment Report for 255 - 261 North Winooski Avenue, Burlington, Vermont.

Soil and Groundwater Analytical Results

Based on the headspace screening results, one soil sample from MW-1 (15'-17' bgs) and three samples from MW-2 (10'-12', 20'-22', and 95'-97' bgs) were submitted for laboratory characterization by EPA Method 8240 (volatile organic compounds) and EPA Method 8080 (PCBs). The laboratory analytical reports are presented in the Attachment (pages 14 to 36).

The soil sample from MW-1 contained no EPA Method 8240 or 8080 compounds, but five unidentified peaks were observed in the VOC analysis and more than 10 unknown compounds were revealed in the PCB analysis. The unknown VOCs have been characterized as aliphatic hydrocarbons at approximately 10 ppb (page 24 of Attachment). Although the PCB analytical methodology does not permit unknown compound identification, the electron capture detector employed in the method is specific for halogenated (e.g., chlorinated) compounds. Additionally, detector responses to PAHs have been known to occur.

The uppermost soil sample from MW-2 contained 84.9 ppb of tetrachloroethene and four unidentified contaminants later determined to be aliphatic hydrocarbons ranging from 5 to 20 ppb (page 25 of Attachment). The sample contained no EPA Method 8080 compounds, but 8 unknown compounds were present. The intermediate sample contained no detectable compounds. The deep sample from MW-2 exhibited one unidentified peak from the EPA 8080 analysis but was otherwise devoid of contaminants.

The monitoring wells were developed and sampled for laboratory analysis on July 13, 1994. The laboratory analytical reports are presented in the Attachment (pages 37 to 43). The sample from MW-1 contained chloroform (19.3 ppb), trichloroethene (2.5 ppb), bromodichloromethane (1.0 ppb) and tetrachloroethene (7.6 ppb). The upgradient well (MW-2) was clean. The concentration of tetrachloroethene (PCE) exceeds both the Vermont Health Advisory (0.7 ppb) and the maximum contaminant level (5 ppb) established for this compound. The chloroform concentration exceeds the health advisory (6 ppb) but is below the maximum contaminant level (100 ppb). The concentration of bromodichloromethane and trichloroethene are below the established MCLs of 100 ppb and 5 ppb respectively; health advisory concentrations have not been proposed for these compounds.

Underground Storage Tank (UST) Evaluation and Removal

Based on site observations and interviews with persons knowledgeable of the site history, a series of exploratory test pits were excavated in areas reputed to contain underground storage tanks. A total of four USTs (5000 gallon No. 4 fuel oil tank, 1000 gallon Stoddard solvent tank, a 500 gallon Stoddard solvent tank, and a 500 gallon Stoddard/perchloroethylene tank) and a septic tank/dry well were uncovered. The contents and conditions of the USTs are described briefly below and are presented in more detail in the two tank pull reports enclosed.. The UST locations are illustrated on

the Site Plan (page 2 of Attachment).

500 Gallon Stoddard Solvent Tank

The abandoned 500 gallon Stoddard Solvent tank was located between units A and D of the complex. Interviews with a former owner indicated that the tank had been abandoned since the facility made a transition to tetrachloroethene dry cleaning solvent in the early 1960s. The tank was empty, and following removal the inspection revealed substantial corrosion, pits and perforations. Plumbing lines, though corroded, had retained their structural integrity. It is possible that residual solvent that may have been present in the tank at the time of abandonment has leaked to the surrounding soils. PID analysis of soil samples from the bottom of the excavation, however, revealed no detectable VOCs.

1,000 Gallon Stoddard Solvent Tank

The abandoned 1,000 gallon Stoddard solvent tank was located adjacent to the 500 gallon UST. Although this tank was not specifically mentioned by former Empire Launderers and Cleaners personnel, it is likely that it also was abandoned in the early 1960s. The tank contents were sampled and submitted for laboratory characterization by EPA Method 8240 (pages 44 to 48 of Attachment), and confirmed to be petroleum-based Stoddard solvent. The tank extended approximately 2.5 feet under the laundromat (Unit A). We received permission from the HMMD to clean and fill the tank in place to minimize disruption to the building. Subsequently the tank contents and cleaning residues were drummed onsite pending the results of the laboratory analysis. The tank was then filled with a concrete slurry. Inspection of the tank interior revealed no indications of corrosion or perforations. The tank plumbing lines also were free of holes. PID analysis of samples from the underside of the UST revealed VOC concentrations ranging from 0.0 to 2.2 ppm.

5,000 Gallon No. 4 Fuel Oil Tank

The abandoned 5,000 gallon No. 4 fuel oil tank was located near Unit D of the complex. Prior to removal, Total Waste Management, Inc. pumped approximately 1,850 gallons of No. 4 fuel oil from the UST. A sample of the oil was characterized by EPA Method 8240 and found to be free of chlorinated solvent thinners (pages 49 - 53 of Attachment). The tank was then pulled and cleaned on the premises. The tank exterior was corroded but exhibited no evidence of pits or perforations. Similarly, the tank plumbing lines were corroded but were otherwise in good condition. PID analysis of soil samples from the underside of the tank revealed no detectable VOCs.

500 Gallon Stoddard Solvent/Perchloroethylene Tank

A third UST was uncovered between units A and D during an exploratory excavation. Prior to removal, a pipe fitting in the top of the tank was accessed and it was determined that the tank contained no liquid phase. A sample of the tank bottom sludge was collected and submitted for laboratory characterization by EPA Method 8010. The sludge contained 1700 μg/kg tetrachloroethene and more than 10 unidentified peaks; the unknown compounds were later determined to be aliphatic hydrocarbons alkylated benzenes and PAHs ranging from 4,000 to 200,000 ppb. The laboratory analytical reports and unidentified peak summary are compiled in the attachment (pages 54 to 57). Analytical evidence suggests that the tank had been employed for storage of both Stoddard solvent and perchloroethylene. Although this tank was not specifically mentioned by former Empire Launderers and Cleaners personnel, it is likely that it also was abandoned in the early 1960s.

The tank was pulled and cleaned on the premises by MacIntyre Corporation. Following removal, the inspection revealed substantial corrosion, pits, and perforations in the tank exterior. It is possible, therefore, that residual solvent that may have been present in the tank at the time of abandonment leaked to the surrounding soils. PID analysis of soil samples from the bottom of the excavation revealed VOC concentrations up to 3.0 ppm.

Dry Well/Septic Tank

A dry well was discovered near the western edge of the subject property. The pervious concrete block structure measured 4' x 4' x 4' and contained several inches of an organic-rich, black sludge overlain by an aqueous phase. A plastic 4" diameter pipe was encountered leading to the tank from the building; upon tracing the pipe back toward the building, however, we determined that the conduit from the building to the dry well had been severed and that the wastewater feature was no longer in use.

The sludge and the supernatant were sampled for laboratory analysis by EPA Method 8240. The laboratory analytical reports and unidentified peak summaries are incorporated in the Attachment (pages 58 to 67). Analysis of the aqueous phase revealed the presence of methylene chloride (1,190 ppb), MTBE (6,620 ppb), benzene (568 ppb), toluene (2,670 ppb), ethylbenzene (610 ppb), and xylenes (3,310 ppb). Similarly, benzene (87.1 ppb), toluene (2,360 ppb), ethylbenzene (446 ppb), and total xylenes (2,700 ppb) were encountered in the sludge sample. The 10 unidentified peaks observed in the sludge sample were later determined to be alkylated benzenes, aliphatic hydrocarbons, and PAHs ranging from 200 to 1,000 ppb. The mixture of solvents and petroleum contaminants is not unreasonable given the diverse history of units F and G of the facility.

The contents of the dry well were removed by MacIntyre Corporation and the interior of the structure was cleaned in place. Representatives of A. Marcelino and Co. removed the dry well and backfilled the hole with clean fill. Previous telephone communications with the Sites Management Section indicated that no paperwork would be required for this activity[2].

Soil Vapor Survey

Discussions with Roto-Rooter and a site visit with one of their personnel revealed that their floor drain tracing technology would be more of a gamble than an investigative tool. Consequently, the money alotted for the smart probe work was directed toward a direct examination of the subsurface along the projected lateral line trajectory. Nine additional soil vapor locations were tested. The soil vapor test locations, and our assessment of the lateral line trajectory based on floor drain and clean-out access point locations, are illustrated on the site plan.

Two of the soil vapor sample locations were tested with 2" PVC vapor wells completed to a depth of approximately 8' below ground surface. The wells were constructed with a 2.5' screened section at the bottom and a bentonite seal at the surface. The wells were purged and sampled with a blower pulling from 1" to 16" H_2O vacuum. The remaining soil vapor tests were conducted with a soil vapor probe at approximately 2.5' bgs. The probe was purged and samples were collected at a rate of one liter per minute using an alpha pump. All soil vapor samples were screened with a Photovac Microtip PID.

The results of the additional soil vapor work are compiled in the Attachment (page 68). VOC concentrations ranged from 0.1 to 0.4 ppm above background levels. The results confirmed that the soil gas contamination on the subject property is confined to the hot spots identified previously.

The original soil vapor extraction investigation of former dry cleaning machine footprint and above-ground solvent tank loci identified four areas of concern. Test locations SV-1, SV-2, SV-4 and SV-5 exhibited initial VOC concentrations ranging from 40 to 200+ ppm and sustained readings from approximately 8 to 30 ppm. Laboratory analysis of samples SV-1 and SV-2 by EPA Method TO-1 (pages 71 - 73 of Attachment) revealed the presence of several hundred ppb PCE and substantially lower concentrations of other compounds.

Conclusions and Recommendations

The results of the supplementary investigation indicate that minor contamination of the subject property has occurred. In our opinion, contaminant levels observed in

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[2] Telephone conference between Jeff Silfer (WH&N) and Mr. Chuck Schwer (SMS), July 1994.

groundwater do not warrant active remediation. However, the installation and operation of a limited soil vapor extraction system could effectively eliminate shallow soil contamination in the soil gas hotspots and reduce the contaminant flux to groundwater. A brief (6 month) period of SVE system operation and monitoring would also provide additional contaminant distribution data that would be of value when the site is considered for closure.

If you have any questions concerning this report or our analysis, please contact me or Jeff Noyes at your convenience.

Sincerely,

Jeffrey A. Silfer, PhD
Geochemist

JAS/ral

Attachments

[SPIESE.L2/JSILFER]

Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

• Hydrogeology • Ecology •

• Environmental Engineering •

BURLINGTON, VERMONT

FORMER EMPIRE LAUNDERERS & CLEANERS

241-249 NORTH WINOOSKI AVE, BURLINGTON

SITE LOCATION MAP

SS-3

MW-1

DRY WELL

SS-2

SV-6

SV-7

C

SV-8

F

SV-3

5000 GALLON NO. 4
FUEL OIL TANK

SV-9

SV-10

PROPERTY LINE

E

SV-2

1000 GALLON
STODDARD TANK

D

SV-1

500 GALLON
STODDARD/PERC TANK

MW-2

SV-5

500 GALLON
STODDARD TANK

OPEN
COURTYARD

SS-1

SV-11

SV-4

SV-12

A

B

C

SV-14

SV-13

NORTH WINOOSKI AVENUE

LEGEND

- SS-2 SURFICIAL SOIL SAMPLE LOCATION
- SV-3 SOIL VAPOR SAMPLE LOCATION
- MW-1 MONITORING WELL LOCATION
- PROJECTED LATERAL SEWER LINE TRAJECTORY

NOTE: GLOBAL POSITIONING (GPS) SURVEY CONDUCTED 10/5/94 – WHSH

p.2

241-249 NO. WINOOSKI AVENUE

BURLINGTON, VERMONT

SITE PLAN

SCALE: 1"=20'

DATE: OCTOBER 14, 1994

PROJECT NO. 93911

FILE: C:\NORTHWIN\SITEPLAN

DRAWN BY: M. Luman

APPROVED: J. Siffer

Wagner, Heindel, and Noyes, Inc.
CONSULTING SCIENTISTS AND ENGINEERS
• Hydrogeology • Ecology •
• Environmental Engineering •
P.O. BOX 1629 BURLINGTON, VERMONT 05402

SOIL BORING LOGS

Vermont Federal Bank
241 - 249 North Winooski Avenue
Burlington, Vermont

June 29, 1994

Inspector: Christopher Green, WH&N
Driller: Myron Domingue
Driller's Assistant: Richard Holmes
Drilling Date: June 21, 1994 to June 23, 1994

Monitor Well #1
Location: Rear of parking lot

SS#	Blows	Depth	Recovery	PID	Soil Description
# 1	5, 4, 2, 3	5 - 7'	0.5'	0.3/0.3	Cinders & fill, dry
# 2	1, 1, 1, 1	10 - 12'	.07'	0.3/0.3	Cinders, broken glass, sand fill, very wet
# 3	2, 2, 2, 9	15 - 17'	.06'	0.3/0.3	Ash, cinders, coal, fill, wet
# 4	1, 1, 1, 1	20 - 22'	.06'	0.3/0.3	Cinders, black grey silty medium sand
# 5	6, 3, 6, 9	25 - 27'	1.3'	0.2/0.2	0-0.9' dark grey rust-stained silt and fine sand 0.9-1.3' tan fine-medium sand, dry
# 6	10, 12, 9, 8	30 - 32'	1.5'	0.2/0.2	tan, fine-medium sand with horizontal rust-stained bands, homogeneous, damp
# 7	3, 6, 4, 11	35 - 37'	1.5'	0.2/0.2	tan, silty, fine sand, wet
# 8	16, 26, 38	40 - 41.5'	1.2'	0.2/0.2	tan, very fine sand, some silt, dense, damp
# 9	8, 12, 16, 15	45 - 47'	1.1'	0.4/0.4	tan, medium sand, iron stains throughout sample, dry
#10	4, 10, 14	50 - 51.5'	1.1'	0.2/0.2	black and white medium sand, no stains, homogeneous, dry
#11	14, 20, 28	55 - 56.5'	1.5'	0.2/0.2	0-1.3' black & white, homogeneous, medium sand, dry; 1.3-1.5' iron-stained, tan, fine sand and silt
#12	8, 13, 16	60 - 61.5'	1.2'	0.2/0.2	very fine sand and silt, iron-stained bands, wet

SS#	Blows	Depth	Recovery	PID	Soil Description
#13	7, 15, 19	70 - 71.5'	1.3'	0.2/0.2	0-1.1' grey silt, some layers of fine sand 1.1-1.3' grey fine sand, saturated

Monitor Well Installation

- Well ID: Monitoring well #1 (MW1)
- Screen: 10 feet of 0.020 slot screen with double filter sock
- Backfill from 69.5 - 59.5 feet below ground surface
- Bentomite seal from 59 - 58 feet below ground surface
- Native backfill from 58 - 2 feet below ground surface
- Concrete and curb box installed from 2 feet below ground surface to ground surface.
- Initial water level = 61.0 feet

SOIL BORING LOGS

Vermont Federal Bank
241 - 249 North Winooski Avenue
Burlington, Vermont

Monitor Well #2
Location: At entrance to courtyard

SS#	Blows	Depth	Recovery	PID	Soil Description
# 1	1, 1, 1, 1	5 - 7'	0.4'	0.3/0.3	Cinder and fill
# 2	2, 2, 2, 2	10 - 12'	1.0'	0.3/0.5	Medium-coarse sand, cinders, coal
# 3	3, 5, 7, 8	15 - 17'	1.3'	0.4/0.5	0-0.3' grey silty fine-coarse sand and fill; 0.3-1.3' tan medium-coarse sand and fine gravel, moist
# 4	7, 9, 8, 11	20 - 22'	1.3'	0.3/0.3	tan fine sand, moist
# 5	6, 6, 7, 7	25 - 27'	1.4'	0.3/0.5	tan fine sand, faint horizontal iron staining
# 6	8, 16, 19	30 - 31.5'	1.3'	0.4/0.6	homogeneous tan fine sand, moist
# 7	8, 7, 9	35 - 36.5'	1.4'	0.4/0.4	homogeneous tan fine sand, some silt, dry
# 8	12, 17, 16	41 - 41.5'	1.2'	0.4/0.4	dense tan fine sand, some silt, dry
# 9	9, 21, 30	50 - 51.5'	1.1'	0.4/0.4	dense very fine sand and silt, homogeneous, bright orange iron-stained horizons throughout
#10	15, 13, 12, 11	60 - 62'	1.7'	0.4/0.4	0-1.6' dark olive-grey fine sandy silt, some clay, rust stains, saturated; 1.6-1.7' tan fine sand, wet
#11	6, 6, 9, 13	70 - 72'	2.0'	0.4/0.4	dark olive-grey silt, very wet, outside of split spoon is dry
#12	8, 8, 10, 10	80 - 82'	1.6'	0.3/0.3	0-1' homogeneous grey silt, some clay, very wet; 1-1.2' tan fine sand, moist 1.2-1.6' homogeneous grey silt, some clay, very wet
#13	18, 21, 15	85 - 87'	0.8'	0.3/0.3	tan dense very fine sand, spotted rust stains throughout, dry

SS#	Blows	Depth	Recovery	PID	Soil Description
#14*	16, 20, 21, 33	95 - 97'	1.4'	0.0/0.2	0-1.4' dark olive-grey silt and clay with occasional 3-5 mm sand horizons and 2-3 mm clay horizons, very dense, sand is wet, silt and clay are damp, iron staining throughout
#15		105 - 107'	0.65'	0.0/0.0	0-0.54' very dense olive-grey silt, some clay, 1 cm band of medium gravel at 0.3'overlain by heavy iron staining, moist
#16	16, 17, 27, 41	116 - 118'			Split spoon is empty
#17	16, 60	118 - 119'	0.35'	0.0/0.0	homogeneous dense tan silt, wet

* Augers are beginning to bind. Retreated augers to 70' and proceeded by driving casing. Sediments washed from inside of casing with rotary bit.

Casing meeting refusal in dense silts. Bored ahead of casing with rotary bit to 125 feet below ground surface and installed monitor well #2.

Monitoring Well Installation:

- Monitor Well #2 (MW2):
- Screen: 15 feet of 0.010 slotted screen with double filter sock from 125 feet below ground surface to 110 feet below ground surface. 10 feet of 0.010 inch slotted screen with single filter sock, 20 - 10 feet below ground surface.
- Native backfill from 125' - 83' below ground surface
- Bentonite seal from 83' - 81' below ground surface
- Native fill from 81' - 2' below ground surface
- Concrete and curb box installed from 2' below ground surface to ground surface.

[SL-VTFED/CG 06/08/94]

M & W Soils Engineering, Inc.

Main St. Charlestown, NH 03603

SHEET 1 OF 2
DATE 6/21/94
HOLE NO. MW-1
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES
ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE.
LOCATION BURLINGTON, VT
REPORT SENT TO JEFF SILFER
PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N.
OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT 61' AT * HOURS
*WELL COMPLETION
AT AT HOURS

	CASING	SAMPLER	CORE BAR.
Type	HSA	SS	
Size I. D.	4 1/4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 6/21/94
DATE COMPL. 6/21/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN/C. ALDRICH
SOILS ENGR.

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
								2'	GRAVEL COBBLES AND SAND			
5'		5' - 7'	SS	5	4		MOIST		LOOSE CINDERS AND ASHES (FILL)	1	24"	6"
				2	3							
10'		10' - 12'	SS	1	1		MOIST		LOOSE SAME MATERIAL	2	24"	12"
				1	1							
15'		15' - 17'	SS	2	2		MOIST		LOOSE SAME MATERIAL	3	24"	12"
				2	9							
20'		20' - 22'	SS	1	1				SAME MATERIAL	4	24"	8"
				1	1							
25'		25' - 27'	SS	6	3			25'	----------OLD GROUND----------	5	24"	16"
				6	9			26'	BROWN SILT			
							DRY		MED. DENSE BROWN FINE SAND - TRACE OF SILT			
30'		30' - 32'	SS	10	12				SAME MATERIAL	6	24"	18"
				9	8							
35'		35' - 37'	SS	3	6				BROWN SILTY FINE SAND	7	24"	24"
				9	11							
									DENSE BROWN FINE SAND - TRACE OF SILT			
		40' - 42'	SS	16	26					8	18"	14"

GROUND SURFACE TO USED CASING THEN

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

sumary
EARTH BORING
ROCK CORING
SAMPLES
HOLE NO. MW-1

M & W Soils Engineering, Inc.
Main St. Charlestown, NH 03603

SHEET 2 OF 2
DATE 6/21/94
HOLE NO. MW-1
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE. LOCATION BURLINGTON, VT
REPORT SENT TO JEFF SILFER PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N. OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT 61' AT * HOURS
*WELL COMPLETION
AT AT HOURS

	CASING	SAMPLER	CORE BAR
Type	HSA	SS	
Size I. D.	4 1/4"	1 1/2"	
Hammer Wt.		140#	BIT
Hammer Fall		30"	

SURFACE ELEV.
DATE STARTED 6/21/94
DATE COMPL. 6/21/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN/C. ALDRICH
SOILS ENGR

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
				38					DENSE BROWN FINE SAND - TRACE OF SILT			
45'		45' - 47'	SS	8	12				MED. DENSE SAME MATERIAL	9	21"	16"
				16	15							
50'		50' - 51'6"	SS	4	10		DRY		MED. DENSE SAME MATERIAL	10	18"	14"
				14								
55'		55' - 56'6"	SS	14	20		DRY		DENSE SAME MATERIAL WITH SILT AND SAND LAYER AT 56'	11	18"	12"
				28								
60'		60' - 61'6"	SS	8	13		WET		DENSE GREYISH BROWN SILTY FINE SAND	12	18"	14"
				18								
65'									SAME MATERIAL			
70'		70" - 71'6"	SS	7	15		WET		DENSE GREY SILT WITH LAYERS OF	13	18"	14"
				19				71'6"	SILTY FINE SAND			
75'									INSTALLED 2" PVC WELL AT 70' SLOTTED FROM 60'-70' BENTONITE SEAL FROM 51'-52' BACKFILL WITH NATIVE MATERIALS USED: 25# OF BENTONITE CHIPS			

GROUND SURFACE TO 70' USED HSA CASING THEN DROVE SS 18"

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

sumary
EARTH BORING 71'6"
ROCK CORING
SAMPLES 13

HOLE NO. MW-1

M & W Soils Engineering, Inc.

Main St. Charlestown, NH 03603

SHEET 1 OF 4
DATE 6/22/94
HOLE NO. MW-2
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE. LOCATION BURLINGTON, VT
REPORT SENT TO JEFF SILFER PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N. OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT _____ AT * _____ HOURS
*WAS NOT TAKEN AFTER INSTALLED
AT _____ AT _____ HOURS

	CASING	SAMPLER	CORE BAR
Type	NW/HSA	SS	
Size I. D.	3:4 1/4	1 1/2"	
Hammer Wt.	300	140#	BIT
Hammer Fall	24"	30"	

SURFACE ELEV.
DATE STARTED 6/22/94
DATE COMPL. 6/22/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN
SOILS ENGR.

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness Drilling time, seams and ect	SAMPLE NO.	PEN	REC
								3"	ASPHALT PAVEMENT			
								1'6"	SAND AND GRAVEL			
5'		5' - 7'	SS	1	1		DRY		LOOSE ASH AND CINDERS	1	24"	6"
				1	1							
10'		10' - 12'	SS	2	2		DRY		LOOSE BROWN GRAVELLY SAND AND CINDERS	2	24"	14"
				2	2							
								14'+/-				
15'		15' - 17'	SS	3	5				BROWN GRAVELLY MED. FINE SAND	3	24"	16"
				7	8							
								→ 18'+/-				
20'		20' - 22'	SS	7	9		MOIST		MED. DENSE BROWN FINE SAND - TRACE OF SILT	4	24"	18"
				8	11							
25'		25' - 27'	SS	6	6				SAME MATERIAL	5	24"	16"
				7	7							
30'		30' - 32'	SS	8	16		MOIST		DENSE BROWN SILTY FINE SAND	6	18"	18"
				19								
35'		35' - 37'	SS	8	7		DRY		MED. DENSE SAME MATERIAL	7	18"	18"
				9								
		40' - 41'6"	SS	12	17		MOIST		DENSE BROWN SILTY FINE SAND	8	18"	18"

GROUND SURFACE TO _____ USED _____ CASING THEN _____

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

sumary
EARTH BORING
ROCK CORING
SAMPLES
HOLE NO. MW-2

M & W Soils Engineering, Inc.
Main St. Charlestown, NH 03603

SHEET 2 OF 4
DATE 6/22/94
HOLE NO. MW-2
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE. LOCATION BURLINGTON, VT
REPORT SENT TO JEFF SILFER PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N. OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT _____ AT * _____ HOURS
*WAS NOT TAKEN AFTER INSTALLED
AT _____ AT _____ HOURS

	CASING	SAMPLER	CORE BAR.
Type	NW/HSA	SS	
Size I. D.	3.4 1/4	1 1/2"	
Hammer Wt.	300	140#	BIT
Hammer Fall	24"	30"	

SURFACE ELEV.
DATE STARTED 6/22/94
DATE COMPL. 6/22/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN
SOILS ENGR.

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
				16			MOIST		DENSE BROWN SILTY FINE SAND			
45'									SAME MATERIAL			
50'		50' - 51'6"	SS	9	21				BROWN LAYERS OF SILT AND SILTY FINE SAND	9	18"	18"
				30								
55'									SAME MATERIAL			
60'		60' - 62'	SS	15	13		VERY MOIST		MED. DENSE GREY LAYERS OF SILT AND SILTY FINE SAND	10	24"	24"
				12	11							
65'									SAME MATERIAL			
70'		70' - 72'	SS	6	6		VERY MOIST		MED. DENSE GREY SILT WITH FINE SAND LAYER	11	24"	24"
				9	13							
75'									SAME MATERIAL			
		80' - 82'	SS	3	8		MOIST		MED. DENSE GREY SILT WITH SILTY SAND LAYERS	12	24"	18"

GROUND SURFACE TO _____ USED _____ CASING THEN _____

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall on 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

Summary
EARTH BORING
ROCK CORING
SAMPLES
HOLE NO. MW-2

M & W Soils Engineering, Inc.

Main St. Charlestown, NH 03603

SHEET 3 OF 4
DATE 6/22/94
HOLE NO. MW-2
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES
ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE.
LOCATION BURLINGTON, VT
REPORT SENT TO-- JEFF SILFER
PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N.
OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT _____ AT * _____ HOURS
*WAS NOT TAKEN AFTER INSTALLED
AT _____ AT _____ HOURS

	CASING	SAMPLER	CORE BAR
Type	NW/HSA	SS	
Size I. D.	3:4 1/4	1 1/2"	
Hammer Wt.	300	140#	BIT
Hammer Fall	24"	30"	

SURFACE ELEV.
DATE STARTED 6/22/94
DATE COMPL. 6/22/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN
SOILS ENGR.

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seems and ect.	SAMPLE NO.	PEN	REC
				8	11		MOIST		MED. DENSE GREY SILT WITH SILTY SAND LAYERS			
		85' - 86'6"	SS	18	21		DRY		DENSE GREYISH BROWN SILTY FINE SAND	13	18"	12"
85'	10			15								
	48											
	79											
	168											
	204								SAME MATERIAL			
90'	155											
	188											
	255											
	235											
	268	95' - 97'	SS	16	20		MOIST		DENSE GREY LAYERS OF SILT AND SILTY FINE SAND	14	24"	24"
95'	104			21	33							
	110											
	272											
	360								SAME MATERIAL			
	635											
100'	79											
	85											
	81											
	130											
	230	105' - 107'	SS	27	32		MOIST		VERY DENSE GREYISH BROWN SILTY FINE SAND	15	24"	12"
105'				42	43							
									SAME MATERIAL			
110'												
									GREY SILT			
115'		116' - 118'	SS	16	17					16	24"	0"
				27	41							
		118' - 119'	SS	16	60					17	12"	12"

GROUND SURFACE TO _____ USED _____ CASING THEN _____

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

sumary
EARTH BORING
ROCK CORING
SAMPLES
HOLE NO. MW-2

M & W Soils Engineering, Inc.
Main St. Charlestown, NH 03603

SHEET 4 OF 4
DATE 6/22/94
HOLE NO. MW-2
LINE & STA.
OFFSET

TO WAGNER HEINDEL & NOYES ADDRESS BURLINGTON, VT
PROJECT NAME 241 NORTH WINOOSKI AVE. LOCATION BURLINGTON, VT
REPORT SENT TO-- JEFF SILFER PROJ. NO.
SAMPLE SENT TO RETAINED BY W. H. & N. OUR JOB NO. 6076-94

GROUND WATER OBSERVATIONS
AT _____ AT * _____ HOURS
*WAS NOT TAKEN AFTER INSTALLED
AT _____ AT _____ HOURS

	CASING	SAMPLER	CORE BAR
Type	NW/HSA	SS	
Size I. D.	3:4 1/4	1 1/2"	
Hammer Wt.	300	140#	BIT
Hammer Fall	24"	30"	

SURFACE ELEV.
DATE STARTED 6/22/94
DATE COMPL. 6/22/94
BORING FORMAN M.D. & R.H.
INSPECTOR C. GREEN
SOILS ENGR.

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler From 0-6	6-12	To 12-18	MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE NO.	PEN	REC
									DRILLED OPEN HOLE WITH 3" ROLLER BIT TO 126'			
125'								126'				
									INSTALLED 2" PVC MONITORING WELL AT 125'			
130'									MATERIALS USED: 50# OF BENTONITE PELLETS			

GROUND SURFACE TO 126' USED HSA CASING THEN 3" NW CASING TO 105'

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohensive Consistancy
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

sumary
EARTH BORING 126'
ROCK CORING
SAMPLES 17
HOLE NO. MW-2

VERMONT FEDERAL BANK
243 NORTH WINOOSKI AVENUE
BURLINGTON, VERMONT

VAPOR EXTRACTION DATA

WELL MW - 1

DEPTH (feet)	DURATION (minutes)	VACCUUM (inches H2O)	VELOCITY (feet per minute)	TEMP. (F)	PID (ppm)	O2 (%)	C02 (%)	CH4 (%)
Background	N/A	N/A	N/A	N/A	0.3	21.0	0.09	0.02
10	2.0	0.2	15	77.0	0.3	10.3	4.90	0.02
20	2.0	0.2	80	73.8	0.2	7.7	6.46	0.02
30	2.0	0.8	45	72.0	0.2	17.4	1.82	0.02
40	3.0	1.5	120	70.0	0.2	20.3	0.45	0.02
50	5.0	11.5	20	66.8	0.4	14.4	5.17	0.02
60	10.0	20.0	30	68.2	0.4	12.9	5.34	0.02
70	10.0	2.0	2800	69.8	0.4	15.9	4.38	0.01

WELL MW - 2

DEPTH (feet)	DURATION (minutes)	VACCUUM (inches H2O)	VELOCITY (feet per minute)	TEMP. (F)	PID (ppm)	O2 (%)	C02 (%)	CH4 (%)
Background	N/A	N/A	N/A	70.0	0.5	21.0	0.09	0.02
10	2.0	< 0.2	135	71.0	3.1	17.7	3.29	0.02
20	2.5	0.5	95	77.0	2.1	19.2	1.53	0.02
30	2.5	0.6	90	77.2	1.9	16.5	3.21	0.02
40	2.5	0.6	80	78.2	1.8	15.5	4.10	0.02
50	3.0	1.1	225	77.4	1.6	15.1	5.08	0.02
60	5.0	1.2	250	80.0	1.0	18.3	2.02	0.02
70	5.0	1.2	275	80.8	2.0	13.1	4.96	0.02
80	10.0	1.4	70	96.2	0.8	19.1	0.54	0.02

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994

PROJECT CODE: HNVF1086
REF. #: 61052 - 61055

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
ANALYSIS DATE: June 30, 1994

PROJECT CODE: HNVF1086
REF.#: 61,052
STATION: MW-1
TIME SAMPLED: 11:45AM
SAMPLER: Chris Green

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
Dichlorodifluoromethane	100	ND[1]
Chloromethane	100	ND
Vinyl Chloride	100	ND
Bromomethane	50	ND
Chloroethane	50	ND
Trichlorofluoromethane	20	ND
Acetone	500	ND
1,1-Dichloroethene	20	ND
Methylene Chloride	200	ND
Carbon Disulfide	10	ND
MTBE	30	ND
trans-1,2-Dichloroethene	20	ND
1,1-Dichloroethane	20	ND
2-Butanone	200	ND
Chloroform	100	ND
1,1,1-Trichloroethane	10	ND
Carbon Tetrachloride	10	ND
1,2-Dichloroethane	10	ND
Benzene	10	ND
Trichloroethene	10	ND
1,2-Dichloropropane	10	ND
Bromodichloromethane	10	ND

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
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REF.#: 61,052

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
4-Methyl-2-Pentanone	100	ND
cis-1,3-Dichloropropene	10	ND
Toluene	20	ND
trans-1,3-Dichloropropene	10	ND
1,1,2-Trichloroethane	20	ND
2-Hexanone	100	ND
Tetrachloroethene	20	ND
Dibromochloromethane	20	ND
Chlorobenzene	20	ND
Ethyl Benzene	10	ND
Total Xylenes	30	ND
Styrene	10	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	10	ND
1,3 Dichlorobenzene	20	ND
1,4 Dichlorobenzene	20	ND
1,2 Dichlorobenzene	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 5

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 97.%
Toluene-d8 : 102.%
4-Bromofluorobenzene : 100.%

PERCENT SOLIDS: 74.%

NOTES:

1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
ANALYSIS DATE: July 1, 1994

PROJECT CODE: HNVF1086
REF.#: 61,053
STATION: MW-2
TIME SAMPLED: 8:15AM
SAMPLER: Chris Green

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
Dichlorodifluoromethane	100	ND[1]
Chloromethane	100	ND
Vinyl Chloride	100	ND
Bromomethane	50	ND
Chloroethane	50	ND
Trichlorofluoromethane	20	ND
Acetone	500	ND
1,1-Dichloroethene	20	ND
Methylene Chloride	200	ND
Carbon Disulfide	10	ND
MTBE	30	ND
trans-1,2-Dichloroethene	20	ND
1,1-Dichloroethane	20	ND
2-Butanone	200	ND
Chloroform	100	ND
1,1,1-Trichloroethane	10	ND
Carbon Tetrachloride	10	ND
1,2-Dichloroethane	10	ND
Benzene	10	ND
Trichloroethene	10	ND
1,2-Dichloropropane	10	ND
Bromodichloromethane	10	ND

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REF.#: 61,053

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
4-Methyl-2-Pentanone	100	ND
cis-1,3-Dichloropropene	10	ND
Toluene	20	ND
trans-1,3-Dichloropropene	10	ND
1,1,2-Trichloroethane	20	ND
2-Hexanone	100	ND
Tetrachloroethene	20	84.9
Dibromochloromethane	20	ND
Chlorobenzene	20	ND
Ethyl Benzene	10	ND
Total Xylenes	30	ND
Styrene	10	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	10	ND
1,3 Dichlorobenzene	20	ND
1,4 Dichlorobenzene	20	ND
1,2 Dichlorobenzene	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 4

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 96.%
Toluene-d8 : 100.%
4-Bromofluorobenzene : 99.%

PERCENT SOLIDS: 89.%

NOTES:

1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
ANALYSIS DATE: July 1, 1994

PROJECT CODE: HNVF1086
REF.#: 61,054
STATION: MW-2
TIME SAMPLED: 3:00PM
SAMPLER: Chris Green

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
Dichlorodifluoromethane	100	ND[1]
Chloromethane	100	ND
Vinyl Chloride	100	ND
Bromomethane	50	ND
Chloroethane	50	ND
Trichlorofluoromethane	20	ND
Acetone	500	ND
1,1-Dichloroethene	20	ND
Methylene Chloride	200	ND
Carbon Disulfide	10	ND
MTBE	30	ND
trans-1,2-Dichloroethene	20	ND
1,1-Dichloroethane	20	ND
2-Butanone	200	ND
Chloroform	100	ND
1,1,1-Trichloroethane	10	ND
Carbon Tetrachloride	10	ND
1,2-Dichloroethane	10	ND
Benzene	10	ND
Trichloroethene	10	ND
1,2-Dichloropropane	10	ND
Bromodichloromethane	10	ND

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REF.#: 61,054

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
4-Methyl-2-Pentanone	100	ND
cis-1,3-Dichloropropene	10	ND
Toluene	20	ND
trans-1,3-Dichloropropene	10	ND
1,1,2-Trichloroethane	20	ND
2-Hexanone	100	ND
Tetrachloroethene	20	ND
Dibromochloromethane	20	ND
Chlorobenzene	20	ND
Ethyl Benzene	10	ND
Total Xylenes	30	ND
Styrene	10	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	10	ND
1,3 Dichlorobenzene	20	ND
1,4 Dichlorobenzene	20	ND
1,2 Dichlorobenzene	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 95.%
Toluene-d8 : 101.%
4-Bromofluorobenzene : 97.%

PERCENT SOLIDS: 89.%

NOTES:

1 None detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8240 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
ANALYSIS DATE: July 1, 1994

PROJECT CODE: HNVF1086
REF.#: 61,055
STATION: MW-2
TIME SAMPLED: 10:00AM
SAMPLER: Chris Green

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
Dichlorodifluoromethane	100	ND[1]
Chloromethane	100	ND
Vinyl Chloride	100	ND
Bromomethane	50	ND
Chloroethane	50	ND
Trichlorofluoromethane	20	ND
Acetone	500	ND
1,1-Dichloroethene	20	ND
Methylene Chloride	200	ND
Carbon Disulfide	10	ND
MTBE	30	ND
trans-1,2-Dichloroethene	20	ND
1,1-Dichloroethane	20	ND
2-Butanone	200	ND
Chloroform	100	ND
1,1,1-Trichloroethane	10	ND
Carbon Tetrachloride	10	ND
1,2-Dichloroethane	10	ND
Benzene	10	ND
Trichloroethene	10	ND
1,2-Dichloropropane	10	ND
Bromodichloromethane	10	ND

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REF.#: 61,055

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
4-Methyl-2-Pentanone	100	ND
cis-1,3-Dichloropropene	10	ND
Toluene	20	ND
trans-1,3-Dichloropropene	10	ND
1,1,2-Trichloroethane	20	ND
2-Hexanone	100	ND
Tetrachloroethene	20	ND
Dibromochloromethane	20	ND
Chlorobenzene	20	ND
Ethyl Benzene	10	ND
Total Xylenes	30	ND
Styrene	10	ND
Bromoform	50	ND
1,1,2,2-Tetrachloroethane	10	ND
1,3 Dichlorobenzene	20	ND
1,4 Dichlorobenzene	20	ND
1,2 Dichlorobenzene	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 93.%
Toluene-d8 : 104.%
4-Bromofluorobenzene : 98.%

PERCENT SOLIDS: 82.%

NOTES:

1 None detected

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EPA METHOD 8240 WATER MATRIX

MATRIX SPIKE AND DUPLICATE LABORATORY CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/241-9 N.Winooski
REPORT DATE: July 5, 1994
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
ANALYSIS DATE: July 1, 1994

PROJECT CODE: HNVF1086
REF.#: 61,053
STATION: MW-2
TIME SAMPLED: 8:15AM
SAMPLER: Chris Green

Parameter	Sample(ug/L)	Spike(ug/L)	Dup 1 (ug/L)	Dup 2 (ug/L)	Average % Rec.
1,1 Dichloroethene	ND[1]	50.	48.1	48.6	97.%
Benzene	ND	50.	56.1	55.9	112.%
Trichloroethene	ND	50.	44.2	50.7	95.%
Toluene	ND	50.	54.4	55.1	110.%
Chlorobenzene	ND	50.	52.3	54.4	107.%

NOTES:
1 None detected

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Laboratory Services

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LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT FED/241-9 N. Winooski
Analysis: EPA Method 8240
Reference #: 61,052
Station I.D.: MW 1; 11:45 a.m.
Unidentified Peaks: 5
Project Code: HNVF1086

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consist of Aliphatic Hydrocarbons at approximately 10 ppb.

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LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT FED/241-9 N. Winooski
Analysis: EPA Method 8240
Reference #: 61,053
Station I.D.: MW 2; 8:15 a.m.
Unidentified Peaks: 4
Project Code: HNVF1086

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consist of Aliphatic Hydrocarbons ranging from 5-20 ppb.

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6L052-059

CHAIN-OF-CUSTODY RECORD

1116

Project Name: VT FED/241-9 N Winooski Site Location:	Reporting Address: WH+N	Billing Address:
Endyne Project Number: HNVF1086	Company: Contact Name/Phone #:	Sampler Name: Chris Green Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
6L052	MW-1	Soil		X	6/22 11:45A	1	250ml	15-17'	25,28	Amber bottle	
6L053	MW-2	"		X	6/23 8:15A	1	"	10-12'	"	"	
6L054	MW-2	"		X	6/23 3:00P	1	"	20-22'	"	"	
6L055	MW-2	"		X	6/24 10:00A	1	"	95-97'	"	"	

Relinquished by: Signature Christopher T Green	Received by: Signature Jon Wetmore	Date/Time 6/25/91 4:15 PM
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/241-9 N. Winooski
DATE REPORTED: July 11, 1994
DATE SAMPLED: June 22-24, 1994

PROJECT CODE: HNVF1087
REF. #: 61,056 - 61,059

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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LABORATORY REPORT

EPA METHOD 8080 -- ORGANOCHLORINE PESTICIDES (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/241-9 N. Winooski
REPORT DATE: July 11, 1994
SAMPLER: Chris Green
DATE SAMPLED: June 22, 1994
DATE RECEIVED: June 23, 1994
DATE EXTRACTED: June 28, 1994

PROJECT CODE: HNVF1087
ANALYSIS DATE: July 1, 1994
STATION: MW-1
REF. #: 61,056
TIME SAMPLED: 11:45 a.m.

Parameter	Detection Limit (ug/kg)[1]	Concentration (ug/kg)as received
Aldrin	20	ND[2]
Heptachlor	20	ND
Heptachlor Epoxide	20	ND
DDD	20	ND
DDE	20	ND
Dieldrin	20	ND
DDT	20	ND
a BHC	20	ND
b BHC	20	ND
g BHC	20	ND
y BHC	20	ND
Chlordane	20	ND
Endosulfan I	20	ND
Endosulfan II	20	ND
Endosulfan Sulfate	20	ND
Endrin	20	ND
Endrin Aldehyde	20	ND
Methoxychlor	200	ND
Toxaphene	100	ND

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Ref: 61,056

EPA METHOD 8080 (continued)

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Arochlor-1016	100	ND
Arochlor-1221	100	ND
Arochlor-1232	100	ND
Arochlor-1242	100	ND
Arochlor-1248	100	ND
Arochlor-1254	100	ND
Arochlor-1260	100	ND
Unspecified PCB	100	ND

PERCENT SOLIDS: 74.%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

Analytical Surrogate Recovery:

Dibutylchlorendate:	NR[3]
Octachloronapthalene:	NR

NOTES:

1 Detection limit raised due to high levels of non-target contaminants.
2 None detected
3 None Recovered. Surrogate diluted out of analytical range.

p. 3C

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LABORATORY REPORT

EPA METHOD 8080 -- ORGANOCHLORINE PESTICIDES (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/241-9 N. Winooski
REPORT DATE: July 11, 1994
SAMPLER: Chris Green
DATE SAMPLED: June 23, 1994
DATE RECEIVED: June 23, 1994
DATE EXTRACTED: June 28, 1994

PROJECT CODE: HNVF1087
ANALYSIS DATE: July 1, 1994
STATION: MW-2
REF. #: 61,057
TIME SAMPLED: 8:15 a.m.

Parameter	Detection Limit (ug/kg)[1]	Concentration (ug/kg)as received
Aldrin	20	ND[2]
Heptachlor	20	ND
Heptachlor Epoxide	20	ND
DDD	20	ND
DDE	20	ND
Dieldrin	20	ND
DDT	20	ND
a BHC	20	ND
b BHC	20	ND
g BHC	20	ND
y BHC	20	ND
Chlordane	20	ND
Endosulfan I	20	ND
Endosulfan II	20	ND
Endosulfan Sulfate	20	ND
Endrin	20	ND
Endrin Aldehyde	20	ND
Methoxychlor	200	ND
Toxaphene	100	ND

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Ref: 61,057

EPA METHOD 8080 (continued)

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Arochlor-1016	100	ND
Arochlor-1221	100	ND
Arochlor-1232	100	ND
Arochlor-1242	100	ND
Arochlor-1248	100	ND
Arochlor-1254	100	ND
Arochlor-1260	100	ND
Unspecified PCB	100	ND

PERCENT SOLIDS: 89.%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 8

Analytical Surrogate Recovery:

Dibutylchlorendate:	NR[3]
Octachloronapthalene:	NR

NOTES:

1 Detection limit raised due to high levels of non-target contaminants.
2 None detected
3 None Recovered. Surrogate diluted out of analytical range.

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LABORATORY REPORT

EPA METHOD 8080 -- ORGANOCHLORINE PESTICIDES (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/241-9 N. Winooski
REPORT DATE: July 11, 1994
SAMPLER: Chris Green
DATE SAMPLED: June 23, 1994
DATE RECEIVED: June 23, 1994
DATE EXTRACTED: June 28, 1994

PROJECT CODE: HNVF1087
ANALYSIS DATE: July 1, 1994
STATION: MW-2
REF. #: 61,058
TIME SAMPLED: 3:00 p.m.

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Aldrin	2	ND[1]
Heptachlor	2	ND
Heptachlor Epoxide	2	ND
DDD	2	ND
DDE	2	ND
Dieldrin	2	ND
DDT	2	ND
a BHC	2	ND
b BHC	2	ND
g BHC	2	ND
y BHC	2	ND
Chlordane	2	ND
Endosulfan I	2	ND
Endosulfan II	2	ND
Endosulfan Sulfate	2	ND
Endrin	2	ND
Endrin Aldehyde	2	ND
Methoxychlor	20	ND
Toxaphene	10	ND

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EPA METHOD 8080 (continued)

Ref: 61,058

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Arochlor-1016	10	ND
Arochlor-1221	10	ND
Arochlor-1232	10	ND
Arochlor-1242	10	ND
Arochlor-1248	10	ND
Arochlor-1254	10	ND
Arochlor-1260	10	ND
Unspecified PCB	10	ND

PERCENT SOLIDS: 89.%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

Analytical Surrogate Recovery:

Dibutylchlorendate:	80.%
Octachloronapthalene:	118.%

NOTES:

1 None detected

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LABORATORY REPORT

EPA METHOD 8080 -- ORGANOCHLORINE PESTICIDES (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/241-9 N. Winooski
REPORT DATE: July 11, 1994
SAMPLER: Chris Green
DATE SAMPLED: June 23, 1994
DATE RECEIVED: June 23, 1994
DATE EXTRACTED: June 28, 1994

PROJECT CODE: HNVF1087
ANALYSIS DATE: July 5, 1994
STATION: MW-2
REF. #: 61,059
TIME SAMPLED: 10:00 a.m.

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Aldrin	2	ND'
Heptachlor	2	ND
Heptachlor Epoxide	2	ND
DDD	2	ND
DDE	2	ND
Dieldrin	2	ND
DDT	2	ND
a BHC	2	ND
b BHC	2	ND
g BHC	2	ND
χ BHC	2	ND
Chlordane	2	ND
Endosulfan I	2	ND
Endosulfan II	2	ND
Endosulfan Sulfate	2	ND
Endrin	2	ND
Endrin Aldehyde	2	ND
Methoxychlor	20	ND
Toxaphene	10	ND

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Ref: 61,059

EPA METHOD 8080 (continued)

Parameter	Detection Limit (ug/kg)	Concentration (ug/kg)as received
Arochlor-1016	10	ND
Arochlor-1221	10	ND
Arochlor-1232	10	ND
Arochlor-1242	10	ND
Arochlor-1248	10	ND
Arochlor-1254	10	ND
Arochlor-1260	10	ND
Unspecified PCB	10	ND

PERCENT SOLIDS: 82.%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

Analytical Surrogate Recovery:

Dibutylchlorendate:	73.%
Octachloronapthalene:	109.%

NOTES:

1 None detected

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CHAIN-OF-CUSTODY RECORD

Project Name: VT FED/241-9 NW Woodstock Site Location: "	Reporting Address: WH+N	Billing Address:
Endyne Project Number: 1MVF1087	Company: Contact Name/Phone #:	Sampler Name: Chris Green Phone #:

Lab #	Sample Location	Matrix	C R A B	C O M P	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
61,056	MW-1	Soil		X	6/22 11:45A	1	250 ml		25, 28	Amber w/ice	
61,057	MW-2	"		X	6/23 8:15A	1	"		"	"	
61,058	MW-2	"		X	6/23 3:00p	1	"		"	"	
61,059	MW-2	"		X	6/24 10:00A	1	"		"	"	

Relinquished by: Signature Christopher T Green	Received by: Signature Jim Watmore	Date/Time 6/25/94 4:18 PM
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify)										

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 241-249 N.Winooski Ave.
REPORT DATE: July 15, 1994
DATE SAMPLED: July 13, 1994

PROJECT CODE: HNNW1097
REF.#: 61,778-61,779

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated the samples were preserved with sodium azide.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 241-249 N.Winooski Ave.
REPORT DATE: July 15, 1994
DATE SAMPLED: July 13, 1994
DATE RECEIVED: July 13, 1994
ANALYSIS DATE: July 15, 1994

PROJECT CODE: HNNW1097
REF.#: 61,778
STATION: MW 1
TIME SAMPLED: Not Indicated
SAMPLER: Greg Leech

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10	ND[1]
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	7	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	19.3
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	2.5
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	1.0

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REF.#: 61,778

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	7.6
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 87.%
Toluene-d8 : 104.%
4-Bromofluorobenzene : 95.%

NOTES:

1 None detected

ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 241-249 N.Winooski Ave.
REPORT DATE: July 15, 1994
DATE SAMPLED: July 13, 1994
DATE RECEIVED: July 13, 1994
ANALYSIS DATE: July 15, 1994

PROJECT CODE: HNNW1097
REF.#: 61,779
STATION: MW-2
TIME SAMPLED: Not Indicated
SAMPLER: Greg Leech

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10	ND[1]
Chloromethane	10	ND
Vinyl Chloride	10	ND
Bromomethane	5	ND
Chloroethane	5	ND
Trichlorofluoromethane	2	ND
Acetone	50	ND
1,1-Dichloroethene	2	ND
Methylene Chloride	20	ND
Carbon Disulfide	7	ND
MTBE	3	ND
trans-1,2-Dichloroethene	2	ND
1,1-Dichloroethane	2	ND
2-Butanone	20	ND
Chloroform	10	ND
1,1,1-Trichloroethane	1	ND
Carbon Tetrachloride	1	ND
1,2-Dichloroethane	1	ND
Benzene	1	ND
Trichloroethene	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND

ENDYNE, INC.

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Williston
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FAX 879

REF.#: 61,779

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10	ND
cis-1,3-Dichloropropene	1	ND
Toluene	2	ND
trans-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	2	ND
2-Hexanone	10	ND
Tetrachloroethene	2	ND
Dibromochloromethane	2	ND
Chlorobenzene	2	ND
Ethyl Benzene	1	ND
Total Xylenes	3	ND
Styrene	1	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3 Dichlorobenzene	2	ND
1,4 Dichlorobenzene	2	ND
1,2 Dichlorobenzene	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 84.%
Toluene-d8 : 104.%
4-Bromofluorobenzene : 96.%

NOTES:

1 None detected

ENDYNE, INC.

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EPA METHOD 8240 WATER MATRIX

MATRIX SPIKE AND DUPLICATE LABORATORY CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 241-249 N.Winooski Ave.
REPORT DATE: July 15, 1994
DATE SAMPLED: July 13, 1994
DATE RECEIVED: July 13, 1994
ANALYSIS DATE: July 15, 1994

PROJECT CODE: HNNW1097
REF.#: 61,779
STATION: MW-2
TIME SAMPLED: Not Indicated
SAMPLER: Greg Leech

Parameter	Sample(ug/L)	Spike(ug/L)	Dup 1 (ug/L)	Dup 2 (ug/L)	Average % Recovery
1,1 Dichloroethene	ND[1]	50.	43.7	44.9	89.%
Benzene	ND	50.	53.6	52.8	106.%
Trichloroethene	ND	50.	44.7	44.2	89.%
Toluene	ND	50.	44.4	43.5	88.%
Chlorobenzene	ND	50.	49.2	46.9	96.%

NOTES:
1 None detected

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IDYNE, INC.

Brown Drive
Vermont 05495
-4333

CHAIN-OF-CUSTODY RECORD

241-249 N. WINOOSKI AVE BURLINGTON	Reporting Address: WHW	Billing Address: WHW
Number: HNW1097	Company: WHW Contact Name/Phone #: JEFF SILFER	Sampler Name: [illegible] Phone #: 658-6820

Sample Location	Matrix	GRAB	COMP	Date/Time 7/13	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
01778 MW1	H2O	X		1/1	2	40ml		8240	HCl	2wks
01779 ↓ 2	↓	↓		↓	↓	↓		↓	↓	↓
				1						

Relinquished by: Signature	Received by: Signature	Date/Time 7/13/94 1130 AM
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

p.4/4

ENDYNE, INC.

Laborat

32 James
Williston,
(802) 879
FAX 879-

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Vt.Fed/North Winooski Ave
REPORT DATE: July 12, 1994
DATE SAMPLED: June 30, 1994

PROJECT CODE: HNVF1177
REF.#: 61,389

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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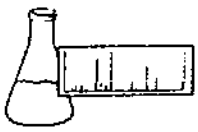

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Laboratc
32 James
Williston, \
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FAX 879-7

LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Vt.Fed/North Winooski Ave
REPORT DATE: July 12, 1994
DATE SAMPLED: June 30, 1994
DATE RECEIVED: July 1, 1994
ANALYSIS DATE: July 11, 1994

PROJECT CODE: HNVF1177
REF.#: 61,389
STATION: Stoddard Tank 2
TIME SAMPLED: 2:00PM
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ug/L)[1]	Concentration (ug/L)
Dichlorodifluoromethane	1,000,000	ND[2]
Chloromethane	1,000,000	ND
Vinyl Chloride	1,000,000	ND
Bromomethane	500,000	ND
Chloroethane	500,000	ND
Trichlorofluoromethane	200,000	ND
Acetone	5,000,000	ND
1,1-Dichloroethene	200,000	ND
Methylene Chloride	2,000,000	ND
Carbon Disulfide	700,000	ND
MTBE	300,000	ND
trans-1,2-Dichloroethene	200,000	ND
1,1-Dichloroethane	200,000	ND
2-Butanone	2,000,000	ND
Chloroform	1,000,000	ND
1,1,1-Trichloroethane	100,000	ND
Carbon Tetrachloride	100,000	ND
1,2-Dichloroethane	100,000	ND
Benzene	100,000	ND
Trichloroethene	100,000	ND
1,2-Dichloropropane	100,000	ND
Bromodichloromethane	100,000	ND

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32 James I
Williston, V
(802) 879-
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REF.#: 61,389

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	1,000,000	ND
cis-1,3-Dichloropropene	100,000	ND
Toluene	200,000	ND
trans-1,3-Dichloropropene	100,000	ND
1,1,2-Trichloroethane	200,000	ND
2-Hexanone	1,000,000	ND
Tetrachloroethene	200,000	ND
Dibromochloromethane	200,000	ND
Chlorobenzene	200,000	ND
Ethyl Benzene	100,000	300,000.
Total Xylenes	300,000	3,130,000
Styrene	100,000	ND
Bromoform	500,000	ND
1,1,2,2-Tetrachloroethane	100,000	ND
1,3 Dichlorobenzene	200,000	ND
1,4 Dichlorobenzene	200,000	ND
1,2 Dichlorobenzene	200,000	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 85.%
Toluene-d8 : 98.%
4-Bromofluorobenzene : 91.%

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 0.001% dilution.
2 None detected

ENDYNE, INC.

Laborat

32 James
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(802) 87
FAX 879-

LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT Fed/North Winooski Ave
Analysis: EPA Method 8240
Reference #: 61,389
Station I.D.: Stoddard Tank 2
Unidentified Peaks: >10
Project Code: HNVF1177

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consist of Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 1 million ug/L to greater than 5 million ug/L.

DYNE, INC.

Brown Drive
Vermont 05495
4333

CHAIN-OF-CUSTODY RECORD

VTRI/North Winooski Ave Burlington, VT	Reporting Address: WRINC	Billing Address: WRINC
Number: 11NVF1177	Company: WRINC Contact Name/Phone #:	Sampler Name: [illegible] Phone #: [illegible]

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
11379	Stoddard Tank 2	Solvent	✓		6-30-11/2PM	1	40mL		8240		

Relinquished by: Signature	Received by: Signature	Date/Time 7/1/11 10:40 AM
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel & Noyes, Inc.
PROJECT NAME: VT Fed/241-249 N. Winooski
DATE REPORTED: February 3, 1994
DATE SAMPLED: January 21, 1994

PROJECT CODE: HNVF1717
REF. #: 56,040

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 601/602 COMPOUNDS BY EPA METHOD 8240

CLIENT: Wagner, Heindel & Noyes, Inc.
PROJECT NAME: VT Fed/241-249 N. Winooski
REPORT DATE: February 3, 1994
DATE SAMPLED: January 21, 1994
DATE RECEIVED: January 24, 1994
ANALYSIS DATE: February 3, 1994

PROJECT CODE: HNVF1717
REF #: 56,040
STATION: UST 1
TIME SAMPLED: 1:00 p.m.
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Dichlorodifluoromethane	10,000	ND[1]
Chloromethane	10,000	ND
Vinyl Chloride	10,000	ND
Bromomethane	5,000	ND
Chloroethane	5,000	ND
Trichlorofluoromethane	2,000	ND
Acetone	50,000	ND
1,1-Dichloroethene	2,000	ND
Methylene Chloride	20,000	ND
Carbon Disulfide	7,000	ND
MTBE	3,000	ND
trans-1,2-Dichloroethene	2,000	ND
1,1-Dichloroethane	2,000	ND
2-Butanone	20,000	ND
Chloroform	10,000	ND
1,1,1-Trichloroethane	1,000	ND
Carbon Tetrachloride	1,000	ND
1,2-Dichloroethene	1,000	ND
Benzene	1,000	ND
Trichloroethene	1,000	ND
12-Dichloropropane	1,000	ND
Bromodichloromethane	1,000	ND

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REF #: 56,040

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	10,000	ND
cis-1,3-Dichloropropene	1,000	ND
Toluene	2,000	18,400.
trans-1,3-Dichloropropene	1,000	ND
1,1,2-Trichloroethane	2,000	ND
2-Hexanone	10,000	ND
Tetrachloroethene	2,000	ND
Dibromochloromethane	2,000	ND
Chlorobenzene	2,000	ND
Ethyl Benzene	1,000	26,300.
Total Xylenes	3,000	171,000.
Styrene	1,000	ND
Bromoform	5,000	ND
1,1,2,2-Tetrachloroethane	1,000	ND
1,3 Dichlorobenzene	2,000	ND
1,4 Dichlorobenzene	2,000	ND
1,2 Dichlorobenzene	2,000	ND

NUMBER OF UNIDENTIFIED PEAKS: >10

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethene-d4:	87%
Toluene-d8:	78%
4-Bromofluorobenzene:	111%

Notes:

1 None detected

ENDYNE, INC.

32 James Brown Drive
Williston, Vermont 05495
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CHAIN-OF-CUSTODY RECORD

09393

Project Name: VTTED/North Winooski
Site Location: 241-249 N. Winooski Ave

Reporting Address: WH&N

Billing Address: WH&N

Endyne Project Number: HNVF1717

Company: WH&N
Contact Name/Phone #: JEFF SICLER

Sampler Name: JEFF SICLER
Phone #: 658-0820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
~~SV1~~	SV1	AIR	✓		1-19-94 11 AM	1	CARBO TRAP 300	PID ≅ 12ppm (2L air)	TO-1		
~~SV2~~	SV2	AIR	✓		1-19-94 11:30	1	CARBO TRAP 300	PID ≈ 29ppm (1L air)	TO-1		
	SV1a (Replicate)*	AIR	✓		1-19-94 11AM	1	"	PID ≈ 11ppm (1L air)	TO-1		
	SV2a (Replicate)*	AIR	✓		1-19-94 11:30	1	"	PID ≈ 29ppm (1L air)	TO-1		
8240	UST 1	OIL	✓		1-21-94 1PM	1	40mL	Fuel Oil	8240		
	~~Boose~~ SS 4	SOIL	✓		1-21-94 3pm	1	250mL		Total Pb		
* Use only if first sample doesn't work out.											

Relinquished by: Signature [signature]

Received by: Signature J M Wetmore,

Date/Time 1-24-94 8:35 AM

Relinquished by: Signature

Received by: Signature

Date/Time 1/24/94 8:35 AM

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid		
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020		
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB		
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB				
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240				
29	TCL[y: vol[mi-vol[metals[Jes, he)												
30	Other (Specify):												

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/No. Winooski Ave.
DATE REPORTED: September 1, 1994
DATE SAMPLED: August 30, 1994
REVISED REPORT: September 16, 1994

PROJECT CODE: HNVF1475
REF. #: 63,746

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times. However, in violation of EPA method specifications, the sample container was received with a significant amount of headspace. This condition may compromise the integrity of the reported data.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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p.54

ENDYNE, INC.

Laboratory Services

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Williston, Vermont 05495
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FAX 879-7103

LABORATORY REPORT
EPA METHOD 8010 COMPOUNDS BY EPA METHOD 8240 -- PURGEABLE HALOCARBONS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT Fed/No. Winooski Ave.
REPORT DATE: September 1, 1994
SAMPLER: Jeff Silfer
DATE SAMPLED: August 30, 1994
DATE RECEIVED: August 30, 1994
REVISED REPORT: September 16, 1994

PROJECT CODE: HNVF1475
ANALYSIS DATE: August 31, 1994
STATION: UST Sludge
REF.#: 63,746
TIME SAMPLED: 10:00 a.m.

Parameter	Minimum Detection Limit[1]	Concentration as received(ug/kg)
Bromodichloromethane	500.	ND[2]
Bromoform	2500.	ND
Bromomethane	2500.	ND
Carbon tetrachloride	1000.	ND
Chlorobenzene	1000.	ND
Chloroethane	2500.	ND
2-Chloroethylvinyl ether	2500.	ND
Chloroform	5000.	ND
Chloromethane	5000.	ND
Dibromochloromethane	1000.	ND
1,2-Dichlorobenzene	1000.	ND
1,3-Dichlorobenzene	1000.	ND
1,4-Dichlorobenzene	1000.	ND
Dichlorodifluoromethane	5000.	ND
1,1-Dichloroethane	1000.	ND
1,2-Dichloroethane	1000.	ND
1,1-Dichloroethene	1000.	ND
trans-1,2-Dichloroethene	1000.	ND
1,2-Dichloropropane	500.	ND
cis-1,3-Dichloropropene	500.	ND
trans-1,3-Dichloropropene	100.	ND
Methylene Chloride	10,000.	ND
1,1,2,2-Tetrachloroethane	500.	ND
Tetrachloroethene	1000.	1,700.
1,1,1-Trichloroethane	500.	ND
1,1,2-Trichloroethane	1000.	ND
Trichloroethene	500.	ND
Trichlorofluoromethane	100.	ND
Vinyl Chloride	5000.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

4-Bromofluorobenzene:	95.%
1,2-Dichloroethane-d4:	100.%
Toluene-d8:	92.%

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at a 2.% dilution.
2 None detected

ENDYNE, INC.

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Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY RECORD

Due 9/5/94 1160

Project Name: VTEEDS/NORTH Site Location: BURLINGTON	Reporting Address: WHSN	Billing Address: WHSN
Endyne Project Number: HNVF-1475	Company: WHSN Contact Name/Phone #: JEFF SCHICK	Sampler Name: Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
63746	UST Sludge	Sludge	✓		8/30/94, 10AM	1	40mL		8010		

Received

Due 9/5/94

Relinguished by: Signature	Received by: Signature	Date/Time 8/30/94
Relinguished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
	Other (Specify):										

ENDYNE, INC.

Laboratory Services

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Williston, Vermont 05495
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LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT Fed/N. Winooski Ave
Analysis: EPA Method 8010
Reference #: 63,746
Station I.D.: UST Sludge
Unidentified Peaks: >10
Project Code: HNVF1475

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consist of Aliphatic Hydrocarbons, Alkylated Benzenes and PAHs ranging from 40,000 ug/kg - 200,000 ug/kg.

Reviewed by_____

ENDYNE, INC.

Laborato

32 James I
Williston, V
(802) 879-
FAX 879-7

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/N.Winooski Ave.
REPORT DATE: June 15, 1994
DATE SAMPLED: June 2, 1994

PROJECT CODE: HNVF1922
REF.#: 60,454

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated the samples were preserved with sodium azide.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

Laboratory

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Williston, Ver
(802) 879-43
FAX 879-71C

LABORATORY REPORT

EPA METHOD 8240 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: VT FED/N.Winooski Ave.
REPORT DATE: June 15, 1994
DATE SAMPLED: June 2, 1994
DATE RECEIVED: June 3, 1994
ANALYSIS DATE: June 15, 1994

PROJECT CODE: HNVF1922
REF.#: 60,454
STATION: Septic Tank
TIME SAMPLED: 10:00AM
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ug/L)[1]	Concentration (ug/L)
Dichlorodifluoromethane	200	ND[2]
Chloromethane	200	ND
Vinyl Chloride	200	ND
Bromomethane	100	ND
Chloroethane	100	ND
Trichlorofluoromethane	40	ND
Acetone	1000	ND
1,1-Dichloroethene	40	ND
Methylene Chloride	400	1,190.
Carbon Disulfide	140	ND
MTBE	60	6,620.
trans-1,2-Dichloroethene	40	ND
1,1-Dichloroethane	40	ND
2-Butanone	400	ND
Chloroform	200	ND
1,1,1-Trichloroethane	20	ND
Carbon Tetrachloride	20	ND
1,2-Dichloroethane	20	ND
Benzene	20	568.
Trichloroethene	20	ND
1,2-Dichloropropane	20	ND
Bromodichloromethane	20	ND

ENDYNE, INC.

Laborat
32 Jame
Williston
(802) 87
FAX 879-7103

REF.#: 60,454

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
4-Methyl-2-Pentanone	200	ND
cis-1,3-Dichloropropene	20	ND
Toluene	40	2,870.
trans-1,3-Dichloropropene	20	ND
1,1,2-Trichloroethane	40	ND
2-Hexanone	200	ND
Tetrachloroethene	40	ND
Dibromochloromethane	40	ND
Chlorobenzene	40	ND
Ethyl Benzene	20	610.
Total Xylenes	60	3,310.
Styrene	20	ND
Bromoform	100	ND
1,1,2,2-Tetrachloroethane	20	ND
1,3 Dichlorobenzene	40	ND
1,4 Dichlorobenzene	40	ND
1,2 Dichlorobenzene	40	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 92.%
Toluene-d8 : 97.%
4-Bromofluorobenzene : 107.%

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 5% dilution.
2 None detected

ENDYNE, INC.

Laboratory

32 James Br
Williston, Ver
(802) 879-43
FAX 879-710

LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT Fed/North Winooski Ave
Analysis: 8240
Reference #: 60,454
Station I.D.: Septic Tank
Unidentified Peaks: >10
Project Code: HNVF1922

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consist of Aliphatic Hydrocarbons and PAHs ranging from 50 - 200 ppb and several Alkylated Benzenes ranging from 500 - 1000 ppb.

p.61

VDYNE, INC.

s Brown Drive
, Vermont 05495
9-4333

CHAIN-OF-CUSTODY RECORD

10555

VTDEC/North Country Fe 111 North Main, Barre,	Reporting Address: WRN	Billing Address:
Number: 1MVF112	Company: WRN Contact Name/Phone #:	Sampler Name: Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
10555	Lake Tank	WTR	✓		1/2 [illegible]	1	Glass				

Relinquished by: Signature	Received by: Signature	Date/Time
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Vt. Fed./North Winooski Ave.
REPORT DATE: August 30, 1994
DATE SAMPLED: August 17, 1994

PROJECT CODE: HNVF1342
REF.#: 63,222

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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Laboratory Services

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LABORATORY REPORT

EPA METHOD 8240 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Vt. Fed./North Winooski Ave.
REPORT DATE: August 30, 1994
DATE SAMPLED: August 17, 1994
DATE RECEIVED: August 17, 1994
ANALYSIS DATE: August 30, 1994

PROJECT CODE: HNVF1342
REF.#: 63,222
STATION: Septic Tank
TIME SAMPLED: 10:00AM
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ug/kg)[1]	Concentration As Received(ug/kg)
Dichlorodifluoromethane	500	ND[2]
Chloromethane	500	ND
Vinyl Chloride	500	ND
Bromomethane	250	ND
Chloroethane	250	ND
Trichlorofluoromethane	100	ND
Acetone	2500	ND
1,1-Dichloroethene	100	ND
Methylene Chloride	1000	ND
Carbon Disulfide	50	ND
MTBE	150	ND
trans-1,2-Dichloroethene	100	ND
1,1-Dichloroethane	100	ND
2-Butanone	1000	ND
Chloroform	500	ND
1,1,1-Trichloroethane	50	ND
Carbon Tetrachloride	50	ND
1,2-Dichloroethane	50	ND
Benzene	50	87.1
Trichloroethene	50	ND
1,2-Dichloropropane	50	ND
Bromodichloromethane	50	ND

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REF.#: 63,222

Parameter	Detection Limit (ug/kg)	Concentration As Received(ug/kg)
4-Methyl-2-Pentanone	500	ND
cis-1,3-Dichloropropene	50	ND
Toluene	100	2,360.
trans-1,3-Dichloropropene	50	ND
1,1,2-Trichloroethane	100	ND
2-Hexanone	500	ND
Tetrachloroethene	100	ND
Dibromochloromethane	100	ND
Chlorobenzene	100	ND
Ethyl Benzene	50	446.
Total Xylenes	150	2,700.
Styrene	50	ND
Bromoform	250	ND
1,1,2,2-Tetrachloroethane	50	ND
1,3 Dichlorobenzene	100	ND
1,4 Dichlorobenzene	100	ND
1,2 Dichlorobenzene	100	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

1,2-Dichloroethane-d4 : 114.%
Toluene-d8 : 94.%
4-Bromofluorobenzene : 103.%

PERCENT SOLIDS: 46.%

NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at 20% dilution.
2 None detected

ENDYNE, INC.

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LABORATORY REPORT

CHARACTERIZATION OF UNIDENTIFIED PEAKS

Client: Wagner, Heindel, and Noyes, Inc.
Project: VT.FED/North Winooski Ave.
Analysis: EPA Method 8240
Reference #: 63,222
Station I.D.: Septic Tank
Unidentified Peaks: >10
Project Code: HNVF1342

Unidentified peak characterization is achieved by direct comparison of sample and library spectral data. The unidentified peaks in this sample consists of Alkylated Benzenes Aliphatic Hydrocarbons and PAHs ranging from 200 - 1000 ppb.

Endyne, Inc.

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CHAIN-OF-CUSTODY RECORD

12055

Project Name: VTTED/ Northeastern ... Site Location: Burlington	Reporting Address: WMN	Billing Address: WMN
Endyne Project Number: HNVF 1342	Company: Contact Name/Phone #: JEFF SILER	Sampler Name: JEFF SILER Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
63222	SEPTIC TANK	SLUDGE	✓		8/17/94	1	40ml		8240		

Relinguished by: Signature [signature]	Received by: Signature [signature]	Date/Time 8/17/94 1:20
Relinguished by: Signature [signature]	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	(25)	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

SUPPLEMENTARY SOIL VAPOR SURVEY
ANALYTICAL RESULTS

1.5" Vapor Extraction Well Results				
Sample Location	**Vacuum (in H_2O)**	**Velocity (fpm)**	**Purge Time (min)**	**PID (ppm)**
SV-11	1" 10" 21.5"	100 1100 2500	5 5 5	0.4 0.4 0.4
SV-12	1" 10" 16"	230 2000 3400	5 5 5	0.3 0.3 0.2

Soil Vapor Probe Results	
Sample Location	**PID (ppm)**
SV-6	0.3
SV-7	0.1
SV-8	0.0
SV-9	0.0
SV-10	0.0
SV-13	0.0
SV-14	0.0

[NOWIN.ATT/JSILFER]

MEMORANDUM

TO: Vermont Federal/241-249 North Winooski Avenue File
FR: Jeff Silfer
DT: 2/17/94
RE: Soil Lead Concentrations, Soil Gas VOC Concentrations and Proposed VES/Monitoring Well Locations

Four surface soil samples were submitted for laboratory analysis of total lead (Pb). The soil sample locations are illustrated on the attached site plan. The analytical results are compiled in the following table:

Sample	Total Lead (mg/kg)
SS-1	158
SS-2	190
SS-3	207
SS-4	43.2

The total lead concentrations in surface soils of the North Winooski Avenue site are nearly an order of magnitude lower than the values obtained by Con-Test for the 111 Archibald Street site. Although the values obtained for the North Winooski Avenue site are higher than background levels for the State of Vermont (typically 10-30 mg/kg), the lead concentrations are not out of line considering the urban environment. Based on our research, the elevated lead levels observed by Con-Test at the Archibald Street site may have originated from the storage and handling of large numbers of lead batteries, and the disposal of battery acid containing dissolved lead, on the property.

As discussed in a previous memo, five soil vapor samples were collected from beneath the slab in Units C, D, E and F. VOC concentrations observed during the soil vapor survey ranged from approximately 0-30 parts per million; there were no VOCs encountered in sample SV-3. Soil vapor sample locations are illustrated on the attached site plan. Samples SV-1 and SV-2 from Unit D were submitted for laboratory analysis of volatile organic compounds. The samples contained low levels of benzene, ethylbenzene, toluene, total xylenes and trichlorothene, and relatively high concentrations of tetrochloroethene. PCE concentrations in SV-1 and SV-2 were 0.7 and 0.9 parts per million respectively. The analytical results are compiled in the following tables.

SV-1

Compound	ppb
Benzene	7
Tetrachlorethene	660
Ethylbenzene	6
Toluene	18
Total Xylenes	32
Trichloroethene	29

SV-2

Compound	ppb
Benzene	Not detected
Tetrachloroethane	883
Ethylbenzene	5
Toluene	20
Total Xylenes	21
Trichloroethene	23

Based on the soil vapor analytical results, it would be prudent to install two monitoring wells on the site. The proposed well locations are depicted on the attached site plan. The monitoring well installation program will permit us to assess the extent of contamination in the soil profile and evaluate the impact of this contamination on groundwater quality. The wells would also serve as a tiered Vapor Extraction System (VES) for site remediation. The approximate cost for the installation of two monitoring wells to a depth of approximately 90 feet along with the materials for the vapor extraction system in the well are shown in Attachment #1.

ENDYNE, INC.

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel & Noyes, Inc.
PROJECT NAME: VT Fed/241-249 N. Winooksi
DATE REPORTED: February 7, 1994
DATE SAMPLED: January 19, 1994

PROJECT CODE: HNVF1716
REF. #: 56,038 - 56,039

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

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LABORATORY REPORT

EPA METHOD TO-1 VOLATILE ORGANICS

CLIENT: Wagner, Heindel & Noyes, Inc.
PROJECT NAME: VT Fed/241-249 N. Winooski
REPORT DATE: February 7, 1994
DATE SAMPLED: January 19, 1994
DATE RECEIVED: January 24, 1994
ANALYSIS DATE: February 7, 1994

PROJECT CODE: HNVF1716
REF #: 56,038
STATION: SV1
TIME SAMPLED: 11:00 a.m.
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ng)	Concentration (ng)
Benzene	20	24.2
Carbon Tetrachloride	20	ND[1]
Chloroform	20	ND
1,2-Dichloroethane	20	ND
Methylene Chloride	100	ND
Tetrachloroethene	50	4,620.
Vinyl Chloride	100	ND
Acrylonitrile	50	ND
Chlorobenzene	20	ND
Ethylbenzene	20	27.0
Toluene	20	68.8
Total Xylenes	20	142.
Trichloroethene	20	162.
1,1-Dichloroethene	20	ND

NOTES:

1 None Detected

ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD TO-1 VOLATILE ORGANICS

CLIENT: Wagner, Heindel & Noyes, Inc.
PROJECT NAME: VT Fed/241-249 N. Winooski
REPORT DATE: February 7, 1994
DATE SAMPLED: January 19, 1994
DATE RECEIVED: January 24, 1994
ANALYSIS DATE: February 7, 1994

PROJECT CODE: HNVF1716
REF #: 56,039
STATION: SV2
TIME SAMPLED: 11:30 a.m.
SAMPLER: Jeff Silfer

Parameter	Detection Limit (ng)	Concentration (ng)
Benzene	20	ND[1]
Carbon Tetrachloride	20	ND
Chloroform	20	ND
1,2-Dichloroethane	20	ND
Methylene Chloride	100	ND
Tetrachloroethene	50	6,310.
Vinyl Chloride	100	ND
Acrylonitrile	50	ND
Chlorobenzene	20	ND
Ethylbenzene	20	20.6
Toluene	20	78.1
Total Xylenes	20	96.3
Trichloroethene	20	130.
1,1-Dichloroethene	20	ND

NOTES:

1 None Detected

ENDYNE, INC.

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56,038 * 56,040

CHAIN-OF-CUSTODY RECORD

09393

Project Name: VTTED/ North Winooski Site Location: 241-249 N. Winooski Ave	Reporting Address: WHSN	Billing Address: WHSN
Endyne Project Number: 1:NNF1716	Company: WHSN Contact Name/Phone #: JEFF SICFER	Sampler Name: JEFF SICFER Phone #: 658-0220

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
21057 SV1	SV1	AIR	✓		1-19-94 11 AM	1	CARBO TRAP 2-10	PID ≈ 12 ppm (2L air)	TO-1		
21058 SV2	SV2	AIR	✓		1-19-94 11:30 AM	1	CARBO TRAP 2-10	PID ≈ 29 ppm (1L air)	TO-1		
	SV1a (Replicate)*	AIR	✓		1-19-94 11 AM	1	"	PID ≈ 11 ppm (1L air)	TO-1		
	SV2a (Replicate)*	AIR	✓		1-19-94 11:30 AM	1	"	PID ≈ 29 ppm (1L air)	TO-1		
	UST 1	OIL	✓		1-21-94 1PM	1	40mL	Fuel Oil	8240		
	Blank SS 4	SOIL	✓		1-21-94 3PM	1	2 oz mL		total Pb		
* Use only if first sample doesn't work out.											

Relinquished by: Signature	Received by: Signature Jim Wetmore	Date/Time 1-24-94 8:35 AM
Relinquished by: Signature	Received by: Signature	Date/Time 1/24/94 8:35 AM

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB	5c	
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

P.13